("ATC Employees..."continued from page 3)

production-tested: the MTV Expansible Van.

The FMTV A1 competitive rebuy mandates the following hardware changes from the existing FMTV A1 fleet: an Environmental Protection Agency 2004 compliant engine, master electrical power switch shut-off, MIL-STD-209H compliant vehicle and cargo tie-downs, a 200-hour life air cleaner, and an ingress/egress ladder that reaches the ground from the cargo bed.

The Rebuy Program consists of two phases. Phase I is a competitive run-off between two contractors, Tactical Vehicle Systems (also known as Stewart & Stevenson, the incumbent) and Oshkosh Truck Corporation. Information from this phase will be used to down select to a single contractor through the Source Selection Evaluation Board process.

Phase II is the production verification of the winning contractor's vehicles. The contractor can propose changes to the vehicle system to improve life cycle cost, safety, durability or performance. All parts and components will be both upward and downward compatible where possible. New parts should be downward compatible with the fielded FMTV A1 fleet. The manufacturer should ensure that new vehicle design is compatible with old parts. FMTV A1 competitive rebuy compatibility with the FMTV A1 system must remain a key effort.

ATC support to the program included the endurance testing of 12 each (6 per manufacturer) test items, 20,000 miles per item, for a total of 240,000 miles of operation along with a full schedule of performance testing which included an additional two vehicles from each contractor. All endurance testing was completed approximately two months ahead of schedule. Efficiencies in testing and success of the test items led to significant savings for the PM.

For more information contact ***Marty Bindel*** *at DSN 298-5125, commercial 410-278-5125, e-mail: Mbindel@atc.army.mil.*

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In This Issue...

Army Chief of Staff Visits ATC

From the ATC Commander

by Colonel Mary Brown, Commander, Aberdeen Test Center

Col. Mary K. Brown

As we enter into another year of testing, I look back at all the great things that ATC accomplished in 2002. The Family of Medium Tactical Vehicles endurance testing was completed almost two months ahead of schedule. We continued to provide test support to the Legacy Force; 2002 marked Bradley Fighting Vehicles Systems 25th anniversary. A ribbon cutting was held for the Standardized UXO Technology Demonstration Center, the Army's first test range for gathering standardized, comparable data on unexploded ordnance detection technologies. We continued to work to expand and improve the Versatile Information System, Integrated, Online (VISION) in order to provide our customers with information faster. We also began testing the Stryker in support of Army Transformation.

As we move ahead in to the new year, we will continue to test the Legacy Systems and the Stryker. We will begin testing for Future Combat Systems through the Objective Force Office. We will also be branching out with new facilities. In the near future, a groundbreaking ceremony will be held for the new Climatic Test Facility. The Climatic Test Facility is comprised of three state-of-the-art, controlled-environment chambers designed for testing all calibers of direct and indirect weapons systems, vehicles, and other materiel. The chambers will be automated and capable of temperature extremes from -65°F to +165°F. A ribbon cutting will be held in the next few months for the Roadway Simulator. The Roadway Simulator will be the world's largest automotive test simulator, and will support vehicles ranging from 5,000 pound, 2-axle light trucks to 80,000-pound tractor trailers. These new facilities will enable us to become even better at what we do best!

I'd like to thank all of the program managers and customers that took time out of their busy schedules to visit ATC. We're doing great things here and we like to share that with you.

I'd also like to thank all of the customers who took the time to send in their comments throughout the year using the Customer Feedback Questionnaire. Please continue to do so, we value your input. The ATC leadership, including myself, reviews each and every questionnaire.

Our ATC customer visits will continue in 2003. We appreciate the time you spend with us and I look forward to seeing you again in the upcoming year.

And finally, I wish you a happy and healthy New Year.

Technical Director's Corner

by Jim Fasig, Technical Director, Aberdeen Test Center

James W. Fasig

The Army is in the middle of a major transformation in how it intends to conduct military operations in the future. Army Transformation is based on the Army Vision "Soldiers on Point for the Nation…Persuasive in Peace, Invincible in War" that was announced by Army Chief Of Staff General Eric K. Shinseki. The goal of the transformation is to make the army more responsive, deployable, agile, versatile, lethal, survivable, and sustainable.

The Army Transformation effort consists of legacy systems (Abrams, Bradley Fighting Vehicle Systems, Family of Medium Tactical Vehicles, etc.), interim systems (Stryker), and objective force systems (Future Combat Systems (FCS), Objective Force Warrior, etc.). ATC has already been intimately involved in the test and evaluation of legacy and interim platforms. The objective force platforms reflect a major change in how the Army will fight. The focus of warfighting will move from a platform centric operational concept to a network centric operational concept.

In order to posture ATC to be able to adequately address the radical network centric, system-of-system changes associated with this Objective Force effort, ATC established an Objective Force Office in May 2002. The charter of this office is to identify, devise and implement test procedures, test facilities, test ranges and test instrumentation to support the cores of ATC in the testing of the network centric aspects of Objective Force variants while also rigorously testing the individual platforms of the FCS. Consistent with this mission, the Virtual Proving Ground Team and the Software Test Team were aligned to this office in October 2002. The office is initially focused on providing a framework for testing network systems by leveraging the testing of existing network systems (i.e., Force XXI Battle Command Brigade and Below (FBCB2)) on both legacy and interim platforms.

ATC is focused on the future and will work to continue to provide the warfighter with the safest and most effective vehicles, weapons, and equipment available throughout the Army Transformation.

ATC Employees Receive Recognition for Rebuy Program

On November 6, a group of Program Manager–Family of Medium Tactical Vehicle (PM-FMTV) and U.S. Army Tank-automotive and Armaments Command (TACOM) personnel attended an awards ceremony in the Medium Truck Test Support Facility. The awards were given for ATC's support of the Family of Medium Tactical Vehicles Competitive Rebuy Program.

A Family of Medium Tactical Vehicle operates on one of ATC's automotive test courses.

Ninety-three ATC government and contractor employees received certificates from Dennis Mazurek, deputy PM-FMTV. Plaques were also presented to Col. Mary Brown, ATC commander, and John Wallace, Automotive Core director, for their support to this major acquisition effort.

The FMTV A1 Competitive Rebuy Program is a full and open competition for a follow-on-five-year multi-year production contract for FMTV A1s to be awarded in fiscal year 2003. The contract is valued at over 2 billion dollars.

The contract will include the two FMTV companion trailers and the following variants produced under the current A1 contract: Light Medium Tactical Vehicle (LMTV) Cargo, LMTV Van, Medium Tactical Vehicle (MTV) Cargo, MTV Tractor, and MTV Wrecker.

Additionally, the FMTV A1 competitive rebuy will include a new variant not previously

See"ATC Employees..." page 16

ATC Globe

On the Cover

Chief of Staff of the Army General Eric Shinseki shakes hands with Colonel Brown, ATC Commander, upon his arrival at ATC.
Photo by Dana Fritts

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Commander *COL Mary K. Brown*
Editor *Vonnie Hughey*
Technical Director *James W. Fasig*
Design *International Imaging Center*

Three ATC Employees Receive Top Department of Defense Acquisition Award

Defense Undersecretary Pete Aldridge presents the Distinguished David Packard Award for Excellence in Acquisition to Mark Picchianti during a June 18 Award Ceremony held in the Pentagon Auditorium. With them are members of the MAAWS IPT Team: Back Row (l.-r.) Carl Jarvis, Robert Harman, Jay Andrews, Tom Lucas, Wes Walters (Saab Bofors Dynamics), U.S. Sales, Patricia Regelski (MAAWS Contracting Officer) and Marylou Dessaux. Front Row (l.-r.): Joe Lynn, Sandi Ruhe, Ninh Vo, Under Secretary of Defense for Acquisition, Technology and Logistics the Honorable Pete Aldridge, Jr., Mark Picchianti (PM MAAWS), Harry Shulte (SOCOM Acquisition Executive), Capt. Kevin Rhodes(SOCOM MAAWS SAM), Bhuvanesh Thoguluva (Deputy PM MAAWS), Gary Pacella (Chief Engineer MAAWS) and Dinesh Chheda

Jay Andrews, Donna Sexton, and Andy Engle received the David Packard Excellence in Acquisition Award, the Defense Department's highest award for acquisition. All three were cited as team members of the U.S. Army Tank-automotive and Armament Command, Armament Research, Development & Engineering Center (TACOM-ARDEC) Multi-role/Anti-armor/Anti-personnel Weapon System (MAAWS)/AT4-CS Team.

Pete Aldridge, Under Secretary of Defense for Acquisition, Technology and Logistics, presented the David Packard Excellence in Acquisition Award to TACOM-ARDEC's MAAWS Integrated Product Team (IPT), one of six Department of Defense program winners, in a ceremony at the Pentagon. The Packard Award is awarded to DoD civilian and/or military organizations, groups, and teams who have made highly significant contributions or demonstrated exemplary innovations and best practices in the Defense acquisition process.

Andrews received the award on behalf of ATC. Sexton and Engle were unable to attend the ceremony because attendance at the ceremony was limited to twenty team members.

Andrews has been heading up the ATC efforts on MAAWS and AT4-CS since 1991. Sexton was the test director working with Andrews on the initial testing of the AT4-CS last year. Engle has done all of the analysis of the MAAWS/AT4 blast-overpressure and recoil data since the original evaluation of the AT4 back in 1985.

The winning MAAWS materiel acquisition program is a joint government defense accomplishment in partnership with industry. The MAAWS program falls directly under the oversight and interests of the Program Executive Officer for Special Programs (PEO-SP) at the U.S. Special Operations Command located at MacDill Air Force Base, Fla.

The MAAWS team's accomplishments, as noted in the Packard Award nomination package, include innovative business practices (focused on e-commerce adaptations), reducing life cycle costs and resource requirements, streamlining DoD's standard materiel acquisition process efficiently and effectively, integration of proven commercial practices, and continuous product and process improvements. These accomplishments included avoiding the normally expected acquisition costs that saved DoD over $15 million and reducing normal risks associated with new fielding schedules by almost 3 years.

Jay Andrews

Donna Sexton

Andy Engle

The MAAWS is the primary infantry combat weapon used by selected Special Operations Forces in both SOCOM and the U.S. Naval Special Warfare Command. MAAWS is a DoD adapted and improved foreign-sourced, nondevelopmental 84mm shoulder-fired infantry weapon system.

The MAAWS includes the M3 recoilless rifle weapon and a family of combat and training ammunition. Saab Bofors Dynamics in Karlsoga, Sweden is the original designer and manufacturer of the weapon system, also known internationally as the Carl Gustaf Weapon.

A major new component of the MAAWS weapon system acquisition program is the addition of the AT4CS weapon. The AT4CS is a lightweight, disposable, one-user autonomous 84mm weapon. It is safely and effectively fired from confined space to defeat various military targets, including lightly armored vehicles, at both near and extended ranges.

The MAAWS IPT is managed by Mark Picchianti, TACOM-ARDEC Close Combat Armaments Center, and consists of over 50 dedicated functional experts and multitalented specialists throughout the DoD. In addition to TACOM-ARDEC, other members include: SOCOM's PEO for Special Projects and Special Operations Acquisition and Logistics Center, the U.S. Navy and Marine Corps, the U.S. Air Force, the Army's Test and Evaluation Command at Aberdeen and Yuma Proving Grounds, the Foreign Comparative Test program and the Natick Soldier Center. These functional experts comprise the various IPT core and sub-teams for acquisition management, concurrent engineering, procurement and contracting, test and evaluation, financial management, integrated logistics support and field sustainment.

The Packard Award, the Department's highest acquisition award, is named in honor of the late David Packard, a former Deputy Secretary of Defense during the Nixon administration. He was also the co-founder and chairman of the Hewlett-Packard Co. and chairman of the President's Blue Ribbon Commission on Defense Management chartered by President Ronald Reagan in 1985. Packard was a strong advocate of excellence in defense acquisition practices.

Army Opens New Site For Demonstrating UXO Detection Technologies

U.S. Army Aberdeen Test Center's Standardized Unexploded Ordnance (UXO) Technology Demonstration Site opened October 2002 as ribbon cutters, left to right: Jim Fasig, ATC technical director; Dave Guzewich, U.S. Army Environmental Center; George Robitaille, U.S. Army Environmental Center; and Dr. John Cullinane, U.S. Army Engineer Research and Development Center, made it official.

The Army's first test range for gathering standardized, comparable data on unexploded ordnance detection technologies opened Oct. 16 at Aberdeen Test Center.

The Aberdeen facility is part of the Standardized Unexploded Ordnance (UXO) Demonstration Site Program. The program uses uniform test methodologies, procedures and facilities to help determine critical UXO technology performance parameters such as the detection capability of systems, their rate of giving false alarms, and their ability to discriminate between UXO and other metal objects.

A second demonstration site is currently under construction atYuma Proving Ground, Ariz.

The UXO demonstration program will support the development and fielding of cost-effective UXO detection and discrimination systems that can be used with a high degree of confidence.

A primary goal of the demonstration sites is to ensure that performance demonstrations are standardized and repeatable, to enable an effective evaluation of new technologies. The sites are designed to advance the capabilities of unexploded ordnance detection and discrimination technologies, necessary to support the operation, restoration and transfer of Department of Defense ranges.

Variations in terrain, geology, weather and vegetation can affect today's technologies. The standardized demonstration sites allow developers and users to gather data on sensor and system performance, compare results, and project the possible cost and effectiveness of each sensor system.

The sites are made up of three areas: a calibration lane, a blind test grid, and an open field site. The calibration lane allows demonstrators to test equipment, build a site library, document signal strength and deal with site-specific variables. The blind test grid allows a demonstrator to operate a sensor system without platform, a coordinate system or operational concerns. The open field site will document the performance of the entire system in actual range operations.

The design helps satisfy the needs of research and development as well as technology demonstration.

The program will use the experience and expertise of organizations from across the Army to ensure that critical UXO technology performance parameters are achieved. It is a shining example of how partnering, teamwork and cooperation can lead to the delivery of a world-class product.

The team involved in developing the demonstration site at Aberdeen Proving Ground included members from the U.S. Army Environmental Center, the U.S. Army Aberdeen Test Center, and the Engineer Research and Development Center of the U.S. Army Corps of Engineers.

*Article provided by **Dennis Teefy** of U.S. Army Aberdeen Test Center and **George Robitaille** of U.S. Army Environmental Center.* ●

ATC Helps Make a Wish Come True

Ten year-old Justin Bryce poses on an M1A2 Abrams Tank with his new friends Staff Sgt. James Varenhorst and Ernest Reeves, ATSS.

When the Make A Wish Foundation contacted ATC for help in granting a little boy with cancer his greatest wish, ATC was more than glad to help.

Ten year-old Justin Bryce's wish was to be a soldier in the United States Army. On October 7, 2002, ATC helped to make that wish come true by allowing Justin and his family to visit ATC.

Jared Cohen, the Make a Wish coordinator that contacted ATC, told public affairs that "Justin is very interested in seeing tanks and meeting with soldiers."

Upon arriving at ATC, Justin, his parents Mary and Charles, his brother and sister Eric and Kaitlin, and Laurel Gaffney, a Wish coordinator, were greeted by Sgt. Thomas Frederick and Susan Hagan, ATC's Public Affairs Liaison. After receiving visitor's badges, the group traveled in style from ATC Visitor Control to Trench Warfare (TW) in a Stryker Interim Armored Vehicle. Justin was delighted to be riding in the gunner's seat.

When the Stryker arrived at TW, Justin was out of the vehicle and examining the M1A2 Abrams tank waiting for him in a flash. His mother commented that Justin hadn't been able to move that fast in months.

After receiving a briefing on the Abrams tank, Justin and his brother and sister each received a ride around the Mile Loop in the tank. Like a typical 10-year-old, Justin was insistent that he be allowed to ride in the tank alone instead of going with his brother and sister. The crew was happy to oblige.

"We were glad to help grant Justin's wish," Sgt. Frederick said, "He seemed like he had a really good time."

Before leaving ATC, Justin was presented with a certificate making him an honorary member of ATC and a Commander's Coin.

After his visit to ATC, Justin continued on to the Pentagon, where he was sworn in as an honorary soldier, and Ft. Belvoir, where he spent a day interacting with soldiers and participating in a training exercise.

*Article provided by Susan Hagan, **ATSS, ATC Public Affairs Liaison.*** ●

ARMY CHIEF OF STAFF VISITS ABERDEEN TEST CENTER

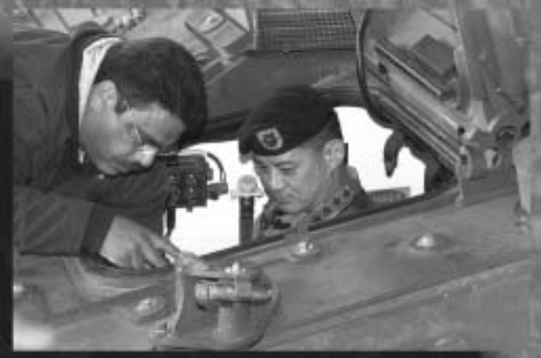
On November 12, 2002, Developmental Test Command Commander Brig. Gen. Marvin McNamara expressed his appreciation to almost 100 contract and government employees for their support to the Army Chief of Staff visit to ATC. The purpose of the visit was to discuss the results of Stryker testing and view testing in progress.

"I wanted to say 'thanks' because you're doing a great job, not only with the visits but also on the Stryker tests," McNamara said. He went on to tell the group that "you gave him [Chief of Staff of the Army General Eric Shinseki] a lot of ammunition to keep in his bag for nay-sayers." He explained that now Shinseki can say that he personally has driven and fired the Stryker and can testify to the vehicle's abilities.

Colonel Mary Brown, ATC Commander, repeated McNamara's sentiments by saying "It took about 100 people to pull off these visits. You've all done a fantastic job. These people need to know what Stryker can do."

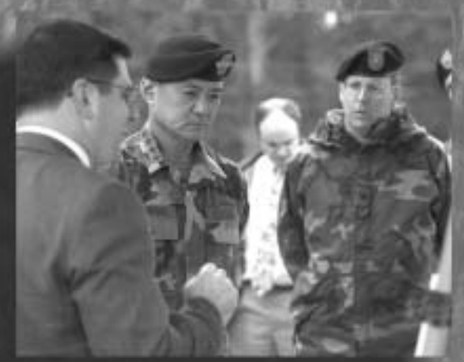
Shinseki visited ATC on October 25.

Photos by HARRY McMULLEN and TOM RUSSELL

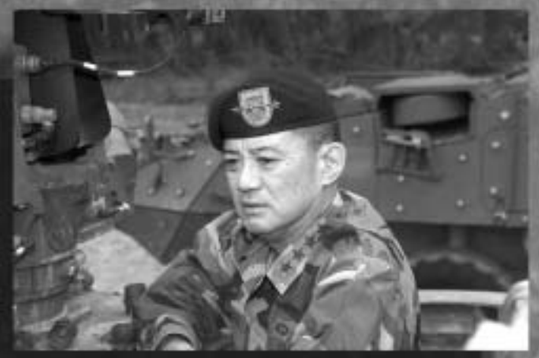


From left: Joe Gonzales, General Shinseki

From left: John Hersey, General Shinseki



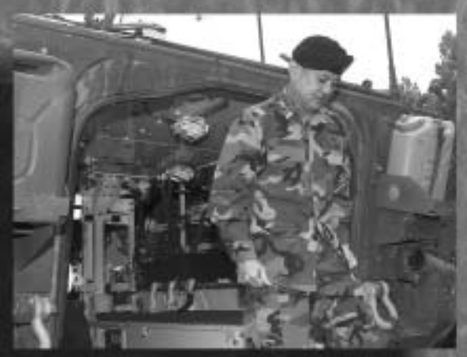
From left: Frank Marotta, General Shinseki, Brig. Gen. McNamara



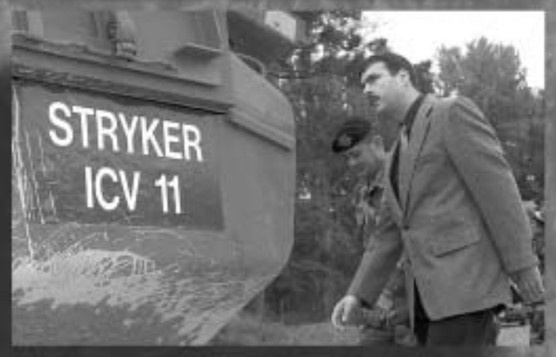
General Shinseki

From left: General Shinseki, Karen Moss

From left: General Shinseki, Brig. Gen. McNamara, Richard Kimball, Col. Sowa, Col. Brown



General Shinseki



From left: General Shinseki, John Riley

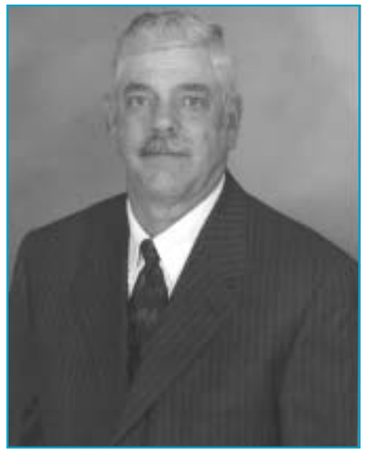
ATC Annual Awards Ceremony Recognizes Employees

Fifteen ATC employees were recognized at the ATC Annual Awards Ceremony held at the Post Theater on October 9.

The **Commander's Quality Award** was presented to the **VISION Digital Library Team**. The team is headed by Dr. Samuel Harley and consists of George Bartlett, Thea Blunt-Henderson, Joseph Compton, Gary Hettchen, Richard Marvel (SFA Frederick Manufacturing), Ted Nanavati (Nanavati Consulting), Michael Reil (SFA Frederick Manufacturing), and Alan Scramlin. The VISION Team developed the Virtual Information System-Integrated, ONline (VISION), which allows material developers to get detailed technical and operational data on warfighting systems as they go through their lifecycle. This allows production decisions to be made early in the acquisition lifecycle.

The Commander's Quality Award is presented to an ATC work group or team for sustained high-quality achievements.

The **Groak Award** was presented to **Barry Kefauver**. Over the past year, Kefauver was the lead mechanic for two major ATC test programs; the post production test of the Family of Medium Tactical Vehicles competitive re-buy program and the production qualification tests of the High



Barry Kefauver

Mobility Artillery Rocket Systems Launcher, Resupply Vehicle, Resupply Trailer and Rocket Systems Launcher. Kefauver's efforts and expertise helped each program to meet critical suspense dates and be completed on time.

The Groak Award, named for the late George Groak, a former general foreman of facilities support, recognizes employees providing various types of test support, without which the ATC technical mission could not be accomplished.

The **Crozier Award** was presented to **Sgt. Thomas Frederick**. Frederick, a Soldier, Operator, Maintainer, Tester, and Evaluator (SOMTE) Soldier for developmental testing at ATC has supported various tests including the M1 Panther, M1A2 Abrams upgrade, M2A2 Bradley, and Land Warrior testing. Currently, Frederick is assigned to the Stryker program.

Sgt. Thomas Frederick

The Crozier Award, named for the late Maj. Gen. William Crozier, Chief of Ordnance from 1901-1917, is presented to a soldier for excellence in technical test project management and test support.

The **Fritter Award** was presented to **Chantal Marus**. Marus has provided exceptional support to facility security. An increase in security and reporting requirements following the events of September 11th significantly

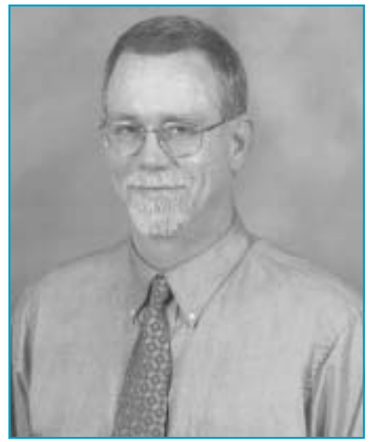
impacted the workload and work schedule of ATC's Security and Intelligence Team. Marus was responsible for required facilities modifications and upgrades, completion of vulnerability assessments, preparation of supporting security planning documents, and preparation of

Chantal Marus

security status briefings.

The Fritter Award is named for the late Richard W. Fritter, a former budget analyst for ATC, and is awarded for exceptional contributions by employees whose jobs give administrative support to ATC, including clerical, supply, safety, security, budget and administrative.

The **Nichols Award** was presented to **Jeffery Adams**. Adams has distinguished himself as a leading expert on flash radiography. His technical expertise combined with his ability to communicate effectively with co-workers, customers and project managers has given ATC an edge to new types of testing in support of the warfighter.



Jeffery Adams

The Nichols Award is named for the late Charles W. Nichols, a former technician at ATC, and recognizes the efforts of ATC technicians without whom the ATC technical mission could not be accomplished.

The **Technical Director's Award** was presented to **Douglas Griffin**.

Douglas Griffin

Griffin worked to complete a major test on the developmental test of the Light Armored Vehicle – Service Life Extension. Findings during the test led to a number of improvements to the test item. Griffin's leadership and customer oriented approach resulted in an excellent working relationship with the test sponsor.

The Technical Director's Award was initiated last year to recognize authors within ATC for outstanding technical papers or reports on topics pertinent to the test and evaluation mission.

The **Commander's Award** was presented to **Joseph Compton**.

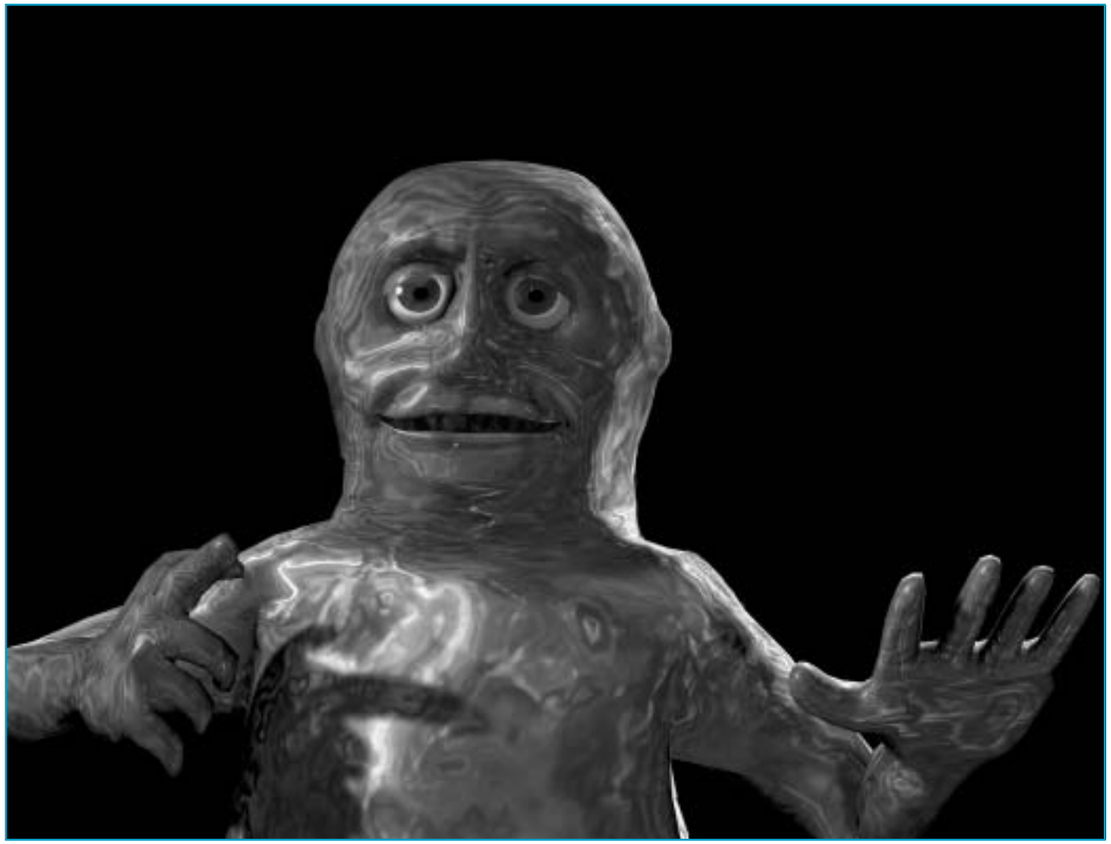
Joseph Compton

Compton provided leadership and technical skills to the implementation of ATC's VISION initiative. He also worked to design and implement several different variants of the Advanced Distributed Modular data Acquisition System (ADMAS)and on the development of the automotive database recorders.

The Commander's Award is presented to a civilian or soldier for outstanding individual achievement on a technical project or study resulting in significant advances in testing technology or outstanding project management.

*Article provided by **Susan Hagan**, ATSS, ATC Public Affairs Liaison.*

Environmental Training Film Wins International Award



Sludgy is the animated character created by Aberdeen Test Center's International Imaging Team, who stars in the award winning training video "What's Down That Drain" produced for the Army Environmental Center.

An animated character who lives down a drain and dispenses environmental wisdom to service members became an international star late last year.

"What's Down That Drain?" won first place in the "Education" category at the Italian government-sponsored International Competition of Military Film in Rome in early November.

The Army's winning eight-minute video features a fallen chief maintenance officer in the body of an animated sludgy character. Through a Star Trek®-like transporter, two soldiers cleaning up a shop are sucked down into the drain, where the character teaches them the importance of pollution prevention and its impact on the successful operation of the facility's oil-water separator.

In the end, the character materializes as the maintenance officer and, in the shop, he and the two soldiers drive home an important message about environmental responsibility.

"What's Down That Drain?" a training film developed by the U.S. Army Environmental Center at Aberdeen Proving Ground, Md., with production support from the U.S. Army Aberdeen Test Center's International Imaging, also at the proving ground, is aimed at enlisted soldiers, sailors, airmen, Marines, departments of public works, installation environmental officers, users of oil/water separators and garrison staff.

The production was created to promote responsible use of floor drains in maintenance shops to keep oil-water separators from being overloaded with pollution and debris.

The production was created to promote responsible use of floor drains in maintenance shops, to keep oil-water separators from being overloaded with pollution and debris.

Tasked with developing an entire training package on operating, servicing and protecting oil/water separators, USAEC's Clean Water Act Program Manager, Billy Ray Scott, approached the imaging center's chief, David Jennings, about producing one of the many pieces for the package. Jennings, who worked as the production supervisor, collaborated with Scott and others to capture ideas for the video and put the finishing touches on the shooting script.

One of the successes of the show was [Scott]...He really knew what he wanted," said Jennings. "He kept [the video] focused on his audience...He wanted a show that was memorable."

"What's Down That Drain?" is one of two videos in of a comprehensive training support package on oil-water separators, said Scott. USAEC and the Department of Defense Clean Water Act Services Steering Committee developed the package as a multi-service guidance and training tool for the proper management, maintenance and operation of oil/water separators.

The sludgy character weathered some challenges on the way to the screen. When the original animator took a job elsewhere, International Imaging turned to nationally recognized in-house artist, Chris White. Armed with talent and an idea, White completed a two-week course in computer animation, during which he refined his sludgy character.

Together with a team of professional actors, a broadcaster, prop master and camera crew, director David Geatty and editor David Shea took White's character and parlayed him into the award-winning production. Camera operators John Miyagawa, and Jeff Adams recorded the action at various locations throughout Aberdeen Proving Ground, using many "staged" scenes to avoid introducing pollution into the environment during the videotaping.

"It was a lot of fun to do," admitted Jennings, who said he is very proud of both the team and the video.

The contest, an initiative of the Italian non-profit association, "Eserciti e Popoli" (Armed Forces and Peoples), was established to recognize outstanding visual information productions created by, or on behalf of, armed forces throughout the world. The competition featured 72 entries from 31 countries.

An international panel of media producers judged the entries. This year, as in the recent past, the competition was tough. Many nations, especially those in Western Europe, make a considerably greater investment of intellectual and monetary capital in the creation of military films and videos than the United States typically does.

Note: Based on an Office Assistant Secretary of Defense (OASD), Public Affairs release.

Government Issues Patents to Army

Based on Creative Work of Employees

Improvements to the technologies applied in Army research, development and testing often start with the creative ideas of the employees who use those systems. One such employee is Dr. Charles Lee Francis, Ph.D., a physicist with the Aberdeen Test Center who worked for the Instrumentation Development Team in the center's Technology Core when this work was done. The U.S. Patent and Trademark Office issued a patent to the Army Sept. 3 for a system Dr. Francis designed to enhance the collection of data during ballistic tests, and ATC's higher headquarters, the Developmental Test Command, recently gave him a $500 cash award for his efforts.

The award comes in addition to $200 Francis received at the time of filing the patent application in 2000, as mandated by Army regulation. Patents for inventions by Army employees are the property of the Army if they are related to work the employees do for the Army, but regulations call for a cash award at the time of filing the application and an additional award when a patent is issued. The regulations also allow inventors a percentage of royalties if applicable.

The system Francis designed, which he titled the "Large Dynamic Range Digitizer Using Dual Analog-to-Digital Converters and Adaptive Output Formatting," was the product of his research, and trial and error, as he attempted to find a better way to accurately record the shock waves and vibrations produced during weapons tests.

"When you build something that people have to use in a wide variety of environments, it has to be characterized in those environments to make sure it still functions properly, and so we have to have equipment that can record the levels of shock and vibration that a piece of test equipment receives," Francis explained. "With the ballistic testing, we measure things such as pressure inside of a gun's chamber, we measure what happens when a vehicle gets hit with a round, the shock that gets carried into the equipment and so forth."

But the measurements are only as accurate as the systems used to record them, and Francis' team needed to have instrumentation that would be capable of precisely recording the full range of impacts that ballistic tests could conceivably produce. The last system the team built, still in use, is about 10 years old. As weapon systems are enhanced over time, so is the technology to test those system, Francis said.

"We're attempting to build an improved system, and one of the parameters that we wanted to improve is what's called dynamic range, and that means the ability to measure over a wide range of signal levels from the very largest to the very smallest," he said. "When you get to smaller and smaller levels, it becomes increasingly difficult to measure those levels.

"What I set out to do is figure out a way to cover this wide range of signal levels. We looked at several approaches to this, and we threw some out. The concept for what I did is not a new one. There are patents for combining analog-to-digital converters to make dynamic range better. My contribution to the state of the art was to figure out a way to put the bits together so that you could actually get more dynamic range in a smaller number of bits. I spent a fair amount of time on experiments in the laboratory to prove that it could actually be done and would work with real signals – the kinds of signals that we normally get on the range."

The system Francis had patented will not be used for the ballistic testing that ATC conducts at Aberdeen Proving Ground because he and his team found a cheaper, more effective technology during the three-year patent process. But Francis does not think his search for improvements to test instrumentation was in vain, because receiving a patent is still "prestigious" for ATC, he said. His instrumentation team also helped ATC find the better solution in an analog-to-digital converter chip, produced by a company called Analog Devices.

"The crux of the matter is that in that time between actually comingup with the concept and the time of actually having to commit to hardware to get it built, we found a chip that would actually do the job pretty close to what we were looking for," Francis said. "It was considerably cheaper and more efficient in terms of the total amount of hardware necessary to implement the scheme that we got the patent for. Just because you've got a patent on something doesn't mean it's the best way to do the job. We kept looking and found a better way to do it. We sort of attacked this new system by looking at all of our existing specifications, and we went down the line and looked at what we thought we could improve, and what we probably couldn't improve, and we put (a solicitation for a bid) out on the street."

The Naval Undersea Warfare Center at Newport, Rhode Island – a research, development, engineering, test and evaluation center for submarines and other weapon systems associated with undersea warfare – won the bid to build a system for ATC that will achieve the desired capabilities, Francis said. He expects a prototype to be delivered by early in 2003.

*Article provided by **Mike Cast**, DTC Public Affairs Office.*

Bradley Celebrates 25 Years

A Bradley Fighting Vehicle Systems (BFVS) 25th anniversary celebration and coin presentation was held December 3 to recognize the efforts of ATC employees working on the Bradley program.

Col. Curtis McCoy, Program Manager, BFVS, expressed his appreciation to ATC, "I look at you guys as my right hand man," he said, "You are the final validator."

He went on to say, "The work we've done all these years has paid off. I look at the vehicle behind me and I'm confident when we put soldiers in it, they will survive."

McCoy presented each ATC employee, along with several DTC and AEC employees, with a BFVS commemorative 25th Anniversary coin. "I feel like everybody in this room who has ever touched a Bradley deserves a coin," he said.

Col. Mary Brown, ATC commander, expressed her appreciation to BFVS for their loyalty to ATC over the years and remarked that, "Together, we have given the Warfighter a great vehicle."

ATC has been testing BFVS since their inception in 1977. Their development has branched into many different test areas at ATC, from automotive to weapons performance and full live-fire survivability testing.

BFVS provides a versatile family of full-tracked, lightly armored fighting vehicles designed to accompany the M1 Abrams Main Battle Tank into battle. The newest generation of the Bradley is the Bradley M2A3/M3A3.

*Article provided by **Susan Hagan**, ATSS, ATC Public Affairs Office.*